

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
16 December 2004 (16.12.2004)

PCT

(10) International Publication Number  
**WO 2004/108015 A2**

(51) International Patent Classification<sup>7</sup>: **A61F**  
(21) International Application Number:  
PCT/US2004/017978  
(22) International Filing Date: 7 June 2004 (07.06.2004)  
(25) Filing Language: English  
(26) Publication Language: English  
(30) Priority Data:  
60/476,522 6 June 2003 (06.06.2003) US  
10/860,920 4 June 2004 (04.06.2004) US

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(71) Applicant and  
(72) Inventor: FERREE, Bret, A. [US/US]; 1238 Cliff Laine Drive, Cincinnati, OH 45208 (US).

(74) Agents: POSA, John, G. et al.; Gifford, Krass, Groh, Sprinkle, Anderson & Citkowski, P.C., 280 N. Old Woodward Ave., Suite 400, Birmingham, MI 48009 (US).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM,

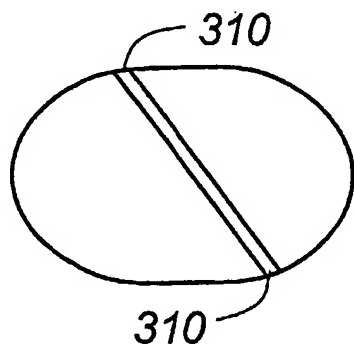
(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— *without international search report and to be republished upon receipt of that report*

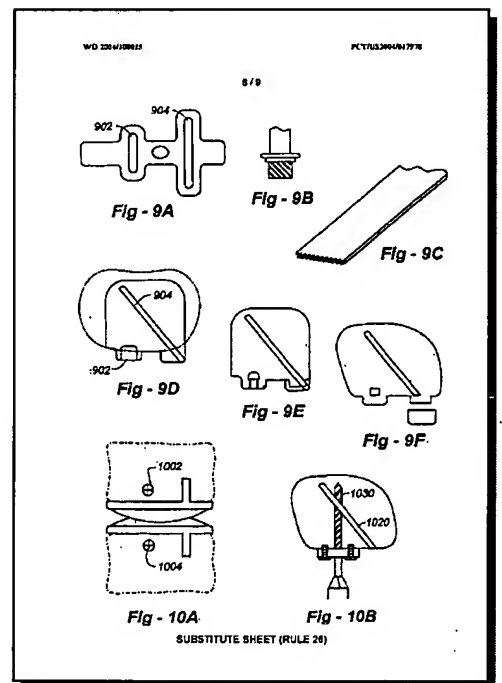
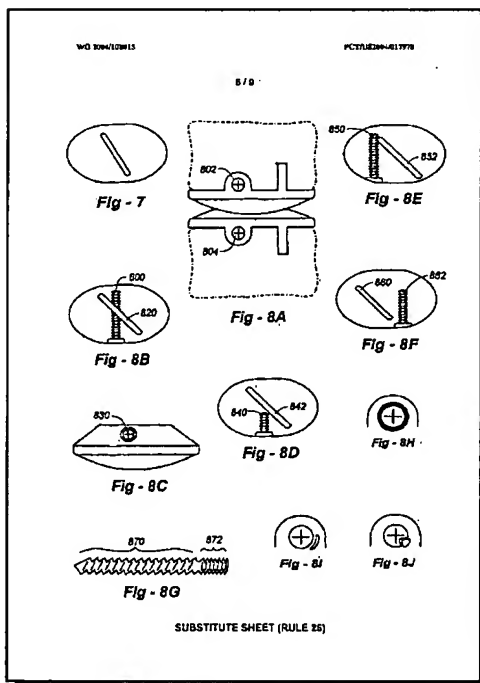
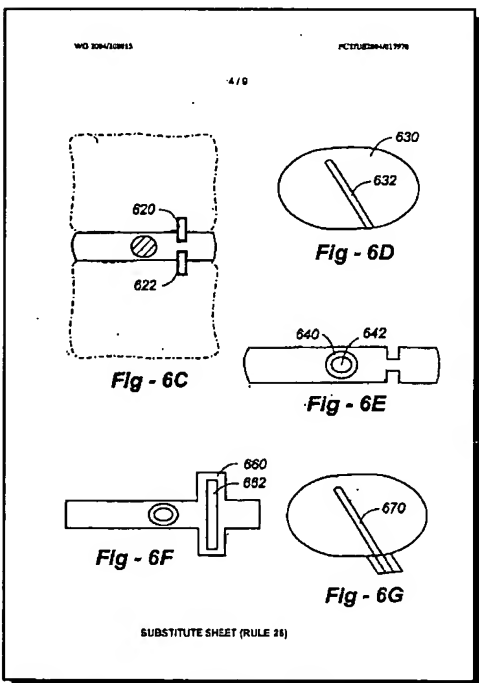
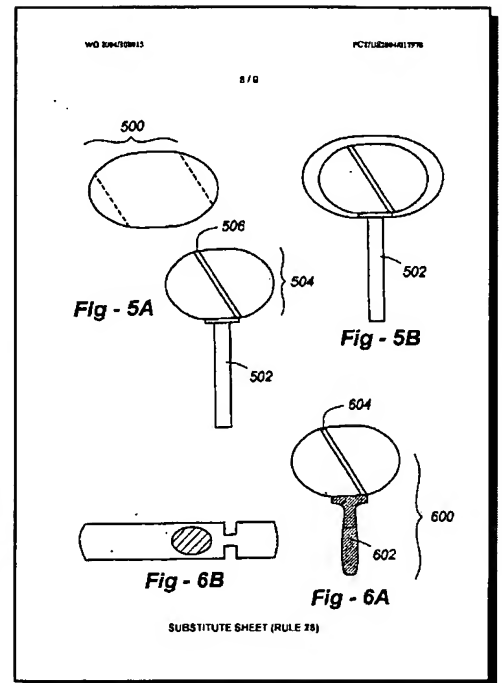
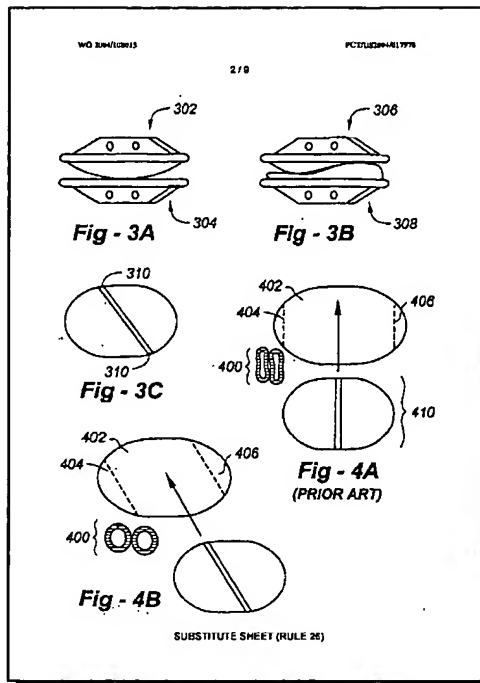
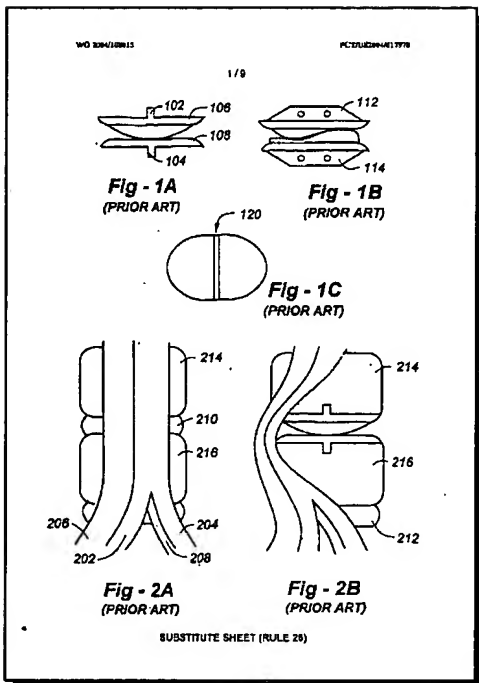
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(54) Title: ARTIFICIAL DISC REPLACEMENTS WITH OBLIQUE KEELS



(57) Abstract: Artificial disc replacement (ADR) systems with intradiscal components feature non anterior-posterior (A-P) or obliqueoriented keels such that the great vessels do not require as much retraction during insertion. The system may further include guides for aligning the ADR prior to insertion, and for cutting an oblique slot into a vertebral endplate to receive the keel. A screw adapted to penetrate a vertebral body may be used in conjunction with the keel. The screw and keel may converge, diverge or intersect. The screw may further include a mechanism providing a locking relationship with the keel. The system may further including a guide to direct drill bits and screws through holes in the keel. ADRs according to the invention may additionally, independently include a non-symmetrical endplate shaped so as to decrease the risk of injuring the great vessels. By virtue of the invention, a second ADR may be installed at a second level having a keel oriented differently from that of the ADR having an orientation other than anterior-to-posterior.

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## ARTIFICIAL DISC REPLACEMENTS WITH OBLIQUE KEELS

Claims of **WO2004108015**

1. An artificial disc replacement (ADR) system, comprising: an intradiscal component, including: an anterior portion, a posterior portion, and a keel adapted to penetrate a vertebral endplate, the keel having an orientation other than anterior-to-posterior when the component is installed.
2. The system of claim 1, further including a guide for aligning the ADR prior to insertion.
3. The system of claim 1, further including a guide for cutting an oblique slot into a vertebral endplate to receive the keel.
4. The system of claim 1, further including a screw adapted to penetrate a vertebral body in conjunction with the keel.
5. The system of claim 4, wherein the screw and keel converge.
6. The system of claim 4, wherein the screw penetrates the keel.
7. The system of claim 4, wherein the screw includes a mechanism providing a locking relationship with the keel.
8. The system of claim 1, further including: an ADR having a screw-capturing portion; and a guide for forming a recess associated with the screw-capturing portion.
9. The system of claim 1, further including a guide to direct drill bits and screws through holes in the keel.
10. The system of claim 1, further including a second ADR at a second level having a keel oriented differently from that of the ADR having an orientation other than anterior-to-posterior.

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11. The system of claim 1, wherein the ADR includes a non-symmetrical endplate oriented rightwardly of the disc space to decrease the risk of injuring the great vessels.

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